

invention, there is provided an electronic component mounting method as defined in the 25th aspect, wherein, before mounting the electronic component on the board while aligning in position the electrode of the electronic component with the electrode of the circuit board with interposition of the solid or semi-solid insulating resin layer in which the insulating resin is mixed with the inorganic filler after the formation of the bump,

a tip of the formed bump is shaped so as to prevent collapse of a neck portion of the bump by once pressurizing the bump with a load of not greater than 20 gf.

According to a 27th aspect of the present invention, there is provided an electronic component mounting method as defined in the 25th or 26th aspect, wherein

the insulating resin is an insulative thermosetting epoxy resin, and an amount of the inorganic filler mixed with this insulative thermosetting epoxy resin is 5 to 90 wt% of the insulative thermosetting epoxy resin.

According to a 28th aspect of the present invention, there is provided an electronic component mounting method comprising:

forming a ball at a tip of a metal wire by an electric spark similarly to wire bonding and forming a gold bump by thermocompression-bonding the formed ball to an

electrode of an electronic component with supersonic waves by means of a capillary;

mounting the electronic component on a circuit board while aligning in position the electrode of the electronic component with an electrode of the board with interposition of a solid or semi-solid insulating resin layer in which an insulating resin is mixed with an inorganic filler without leveling the formed bump;

subsequently metallically bonding the gold bump to the electrode of the board with supersonic waves applied while shaping the tip so as to prevent collapse of a neck portion of the gold bump with a load applied from an upper surface side of the electronic component by means of a tool; and

subsequently bonding the electronic component to the circuit board by hardening the insulating resin interposed between the electronic component and the circuit board while correcting warp of the board and crushing the bump with a pressure force of not smaller than 20 gf per bump applied to the electronic component against the circuit board and heat applied from the upper surface side of the electronic component or heat applied from the board side or heat applied from both the electronic component side and the board side, so that the electrode of the electronic component is electrically connected with the

electrode of the circuit board.

According to a 29th aspect of the present invention, there is provided an electronic component mounting method as defined in any one of the 25th through 28th aspects, wherein the electronic component has a plurality of electrodes, a solid insulating resin sheet that has a configurational dimension smaller than an outline dimension defined by joining the plurality of electrodes of the electronic component is stuck as the insulating resin layer to the circuit board before the positional alignment and thereafter subjected to the positional alignment, and at the bonding time, the insulating resin interposed between the electronic component and the circuit board is hardened while concurrently correcting the warp of the circuit board by pressurizing the electronic component against the circuit board with heat applied to the insulating resin sheet, so that the electronic component is bonded to the circuit board.

According to a 30th aspect of the present invention, there is provided an electronic component mounting method as defined in any one of the 25th through 29th aspects, wherein the gold bump that has an approximately conically shaped tip is formed on the electrode of the electronic component by means of the